

## WHAT IS CLAIMED IS:

1. A network control system in an AVC system to which a plurality of AV apparatuses are connected via a transmission line, comprising:

a controller equipped with a user interface; and

a device to be controlled,

wherein the device has apparatus information in device and version information indicative of a version of the information inside the device to be updated when the apparatus information in device is updated,

characterized in that the controller reads the apparatus information and the version information inside the device from the device and detects a change inside the device by the version information.

2. The network control system according to claim 1, characterized in that, the apparatus information of the device inside is state information showing a condition of the device, and

the device has the state information showing the condition of the device and version information that shows the version of the state information to be updated when the state information is updated, and

the controller reads the state information and the version information from the device and detects the change of the device by the version information.

3. The network control system according to claim 2, characterized in that, the controller issues a notification request to the device for requesting notification of the change of the state information when the

controller uses the state information of the device, and

receives the version information as the primary response to the notification request, and if the state information is changed in the device, the controller receives the updated version information as the secondary response to the notification request.

4. The network control system according to claim 3, characterized in that the controller reads the state information between the primary response and the secondary response.

5. The network control system according to claim 3, characterized in that the secondary response from the device contains the updated version information and updated state information.

6. The network control system according to claim 1, characterized in that, the information of the device inside is operation screen information which shows an operation screen of the device, and

the device has the operation screen information of the device and the version information showing the version of the operation screen information when the operation screen information is updated, and

the controller reads the operation screen information and the version information from the device, and detects a change of the operation screen of the device by the version information.

7. The network control system according to claim 6, characterized in

that, the operation screen information comprises a plurality of objects, and the controller issues the notification request to the device for requesting notification on changes of the operation screen information when the device operation screen information of the device is displayed on the display screen, and receives the version information as the primary response to the notification request, and receives the updated version information as the secondary response to the notification request when the operation screen information is changed in the device.

8. The network control system according to claim 7, characterized in that the secondary response from the device contains the updated version information and the updated object information.

9. The network control system according to claim 1, characterized in that the version information is a counter value which is incremented every time the information of the device inside is updated.

10. The device according to claim 1, characterized in that, the information of the device inside is the state information that indicates the device condition, and that the device has the state information that shows the device condition and the version information that shows the version of the state information to be updated when the state information is updated, and the change of the device condition is detected by the version information.

11. The controller according to claim 1, characterized in that the controller reads the state information that indicates the condition of the device and version information that shows the version of the state information from the device to be controlled, and detects the change of the device condition by the version information.

12. The device according to claim 4, characterized in that, the device returns the version information as the primary response to the notification request from the controller,

returns the updated version information as the secondary response of the notification request when the state information is changed in the device, and reads the state information between the primary response and the secondary response.

13. The controller according to claim 4, characterized in that, the controller received, as the primary response of the notification request, the version information that indicates the version of the state information, and receives the updated version information as the secondary response of the notification request when the operation screen information is changed in the device, and reads the state information of the device between the primary response and the secondary response.

14. The device according to claim 6, characterized in that, the device has the operation screen information that shows the operation screen and version information that shows version of the operation screen

information to be updated when the operation screen information is updated, and the change of the operation screen is indicated by the version information.

5 15. The controller according to claim 6, characterized in that, the  
controller reads, from the device, the operation screen information that  
indicates the operation screen of the device and the version information  
that indicates the version of the operation screen information updated  
when the operation screen information is updated, and detects the change  
10 of the operation screen information of the device by the version  
information.

16. The device according to claim 7, characterized in that, the operation  
screen information comprises a plurality of objects, and the device  
15 returns the version information as the primary response to the  
notification request from the controller, and returns the updated version  
information as the secondary response to the notification request when  
the operation screen information is changed in the device.

20 17. The controller according to claim 7, characterized in that, the  
controller issues a notification request for requesting a notice of changes  
of the operation screen information to the device when the device  
operation screen information is displayed on the display screen, and  
receives the version information as the primary response to the  
25 notification request, and receives the updated version information as the

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secondary response to the notification request when the operation screen information is changed in the device.

18. The network control system according to claim 7, characterized in that, the object comprises invariable objects which are not varied irrespective of the device state and variable objects which are varied in accordance with the device state, and the controller reads the objects from the device, carries out caching to the invariable objects, and displays the objects on the display screen.

19. The network control system according to claim 18, characterized in that, the device has an invariable data set comprising invariable objects only and a variable data set comprising variable objects, and the controller carries out caching to the objects belonging to the invariable data set.

20. The device according to claim 18, characterized in that the objects comprise invariable objects which are not varied irrespective of the device state and variable objects which are varied in accordance with the device state.

21. The controller according to claim 18, characterized in that, the controller reads, from the device, the invariable objects which are not varied irrespective of the device state and variable objects which are varied in accordance with the device state, and carries out caching to the

invariable objects, and displays the invariable objects and variable objects on the display screen.

22. A network control system in an AVC system to which a plurality of AV apparatuses are connected via a transmission line, comprising:

a controller equipped with a user interface; and  
a device to be controlled,

wherein the device has a function information table that shows a device function and state, component elements constituting the function information table, and element version information that shows a version of the component elements of the function information table, and

wherein the controller detects changes of information in the function information table using the element version information when the controller uses the information in the function information table of the device.

23. The network control system according to claim 22, characterized in that, the device further has the function table version information that indicates the version of the function table, and

the controller detects changes of the information in the function information table using the function table version information when the controller uses the information in the function table of the device, and detects changes of information of the component elements using the element version information when the controller uses the information in the function information table of the device.

24. The network control system according to claim 22, characterized in that, the device has a plurality of components that comprise the function table and the element version information that indicates the version of the components for each component, and

the controller detects changes of the information of the component information using the element version information of the component when the controller uses the information in the components of the device.

25. The network control system according to claim 22, characterized in that, the controller issues a notification request to the device for requesting notification of the change within the notification range using the information on the notification range indicated by each component when the controller uses the information in the function table of the device, and

receives the element version information corresponding to the notification range, as the primary response to the notification request, and

if the information within the notification range is changed, the controller receives the updated element version information as the secondary response to the notification request.

26. The network control system according to claim 25, characterized in that the controller reads the information within the notification range between the primary response and the secondary response.



27. The network control system according to claim 22, characterized in that the element version information indicating the version of the component is the function table version information when the component information is changed.

28. The network control system according to claim 22, characterized in that the components are menus.

29. The network control system according to claim 22, characterized in that the components are display parts.

30. The network control system according to claim 25, characterized in that the secondary response from the device contains the updated element version information and the updated information.

31. A network control system having a controller equipped with user interface connected to a device to be controlled via a transmission line, characterized in that, the device comprises:

apparatus information holding means (7, 8) for holding apparatus information in device, said apparatus information containing apparatus configuration information which indicates device configuration information and containing operation screen information which indicates a function and condition of the device and for configuring an operation screen of the device; and



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38. The network control system according to claim 35, wherein the version information is included in the menu list response (211), display part response (231) and object response (272) which are returned from the device to the controller.

39. A network control method having a controller equipped with user interface connected to a device to be controlled via a transmission line, characterized by comprising the steps of:

holding apparatus information in the device, said apparatus information containing apparatus configuration information which indicates device configuration information and containing operation screen information which indicates a function and condition of the device and for configuring an operation screen of the device;

when said held information is changed, generating version information indicative of a change generation thereof to carry out version management, and

when a notification request is issued from the controller to the device in response to the change of the apparatus information in the device, sending a response to the controller from the device in response to said notification request, wherein the response from the device contains the version information.

40. The network control system according to claim 39, wherein the version information is obtained by incrementing a counter value every

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